

CLAIMS

1. A method comprising:
determining that a wireless device operating in a first wireless communication
5 system is detecting a triggering event;
initiating a registration sequence with a second wireless communication
system in response to determining that the wireless device is detecting the triggering
event;
determining at least one of a speed and a displacement of the wireless device;
10 and
conducting at least one of a current call and a subsequent call via the second
wireless communication system in response to determining that at least one of the
speed and displacement of the wireless device exceeds a first predetermined
threshold.
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2. The method of claim 1, wherein the triggering event is at least one of a
detection of a wireless local area network border cell and a detection of a degradation
of signal quality.
- 20 3. The method of claim 2, wherein the first wireless communication system is a
wireless local area network (WLAN) and the second wireless communication system
is a wide area network (WAN).

4. The method of claim 3, wherein the wireless local area network (WLAN) uses at least one protocol of IEEE Standard 802.11 and Bluetooth.

5. The method of claim 3, wherein the wide area network (WAN) uses at least one protocol of code division multiple access (CDMA), time division multiple access (TDMA), global system for mobile communications (GSM) and integrated digital enhanced network (iDEN).

6. The method of claim 2, wherein the first wireless communication system is a wide area network (WAN) and the second wireless communication system is a wireless local area network (WLAN).

7. The method of claim 6, wherein the wireless local area network (WLAN) uses at least one protocol of IEEE Standard 802.11 and Bluetooth.

8. The method of claim 6, wherein the wide area network (WAN) uses at least one protocol of code division multiple access (CDMA), time division multiple access (TDMA), global system for mobile communications (GSM) and integrated digital enhanced network (iDEN).

9. The method of claim 2, further comprising:
aborting the registration sequence in response to determining that at least one of the speed and displacement of the wireless device does not exceed a second predetermined threshold.

10. The method of claim 2, further comprising:

deregistering from the second wireless communication system in response to determining that at least one of the speed and displacement of the wireless device does not exceed a third predetermined threshold.

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11. The method of claim 2, wherein the determining at least one of a speed and a displacement of the wireless device step is performed by movement detecting means of the wireless device.

10 12. The method of claim 11, wherein the movement detecting means comprises at least one of an accelerometer detecting means and a global positioning system means.

13. The method of claim 12, wherein the accelerometer detecting means comprises at least three independent axes.

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14. A method comprising:

determining that a wireless device operating in a first wireless communication system is detecting a triggering event;

measuring at least one of a speed and a displacement of the wireless device;

5 initiating a registration sequence with a second wireless communication system in response to determining that the wireless device is detecting a triggering event and measuring at least one of the speed and displacement of the wireless device exceeding a first predetermined threshold; and

10 conducting current and subsequent calls via the second wireless communication system.

15 15. The method of claim 14, wherein the triggering event is at least one of a detection of a wireless local area network border cell and a detection of a degradation of signal quality.

16. The method of claim 15, further comprising:

aborting the registration sequence in response to determining that at least one of the speed and displacement of the wireless device does not exceed a second predetermined threshold.

20 17. The method of claim 15, further comprising:

deregistering from the second wireless communication system in response to determining that at least one of the speed and displacement of the wireless device does not exceed a second predetermined threshold.

18. A mobile communication device comprising:

at least two transceivers, each transceiver designed to operate on a separate wireless communications system, for transmitting and receiving wireless information;

5 a controller, communicatively coupled to each transceiver, for managing the operation of the mobile communication device;

a first wireless communications system stack, communicatively coupled to the controller, having instructions for communicating according to its respective protocol;

10 a second wireless communications system stack, communicatively coupled to the controller, having instructions for communicating according to its respective protocol;

a means for measuring speed and displacement of the wireless device, communicatively coupled to the controller; and

15 a handover manager, communicatively coupled to the controller, the first wireless communications system stack, the second wireless communications system stack, and the means for measuring speed and displacement of the wireless device, the handover manager for determining when to handover from the first wireless communication system to the second wireless communication system in response to determining that the wireless device is in communication with a wireless local area
20 network border cell and that at least one of the speed and displacement of the device exceed a first predetermined threshold.

19. The device of claim 18, wherein the means for measuring speed and displacement of the device comprises at least one of an accelerometer detecting means and a global positioning system detecting means.
- 5 20. The device of claim 19, wherein the accelerometer detecting means comprises at least three independent axes.

21. A mobile communication system comprising:

at least one cell of a wireless local area network communications system, the at least one cell providing communication coverage within a structure having at least one egress point;

5 at least one coverage cell of a second communications system, overlapping the at least one cell of a wireless local area network, for providing communication coverage outside the structure;

at least one border cell of a wireless local area network communications system, the border cell located at the egress point of the structure, providing a transition area from the wireless local area network communications system and the second communications system; and

10 at least one mobile subscriber device, communicatively coupled with the at least one cell of the wireless local area network communications system, the at least one coverage cell of the second communications system, and the at least one border cell of a wireless local area network communications system, the at least one mobile subscriber device determining when to handover from one wireless communication system to the second wireless communication system in response to determining that the device is in communication with a wireless local area network border cell and that at least one of the speed and displacement of the device exceed a predetermined threshold.

22. A computer readable medium comprising computer instructions for performing the steps of:

determining that a wireless device operating in a first wireless communication system is detecting a triggering event;

5 initiating a registration sequence with a second wireless communication system in response to determining that the wireless device is detecting the triggering event;

determining at least one of a speed and a displacement of the wireless device; and

10 conducting current and subsequent calls via the second wireless communication system in response to determining that at least one of the speed and displacement of the wireless device exceeds a first predetermined threshold.

23. The computer readable medium of claim 22, wherein the triggering event is at
15 least one of a detection of a wireless local area network border cell and a detection of a degradation of signal quality.

24. The computer readable medium of claim 23, further comprising:
aborting the registration sequence in response to determining that at least one
20 of the speed and displacement of the wireless device does not exceed a second predetermined threshold.

25. The computer readable medium of claim 23, further comprising:

deregistering from the second wireless communication system in response to determining that at least one of the speed and displacement of the wireless device does not exceed a third predetermined threshold.

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26. The computer readable medium of claim 23, wherein the determining at least one of a speed and a displacement of the wireless device step is performed by movement detecting means of the wireless device.

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27. The computer readable medium of claim 26, wherein the movement detecting means comprises at least one of an accelerometer detecting means and a global positioning system means.

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28. A computer readable medium comprising computer instructions for performing the steps of:

determining that a wireless device operating in a first wireless communication system is detecting a triggering event;

measuring at least one of a speed and a displacement of the wireless device;

initiating a registration sequence with a second wireless communication

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system in response to determining that the wireless device is detecting a triggering event and measuring at least one of the speed and displacement of the wireless device exceeding a first predetermined threshold; and

conducting current and subsequent calls via the second wireless communication system.

29. The computer readable medium of claim 28, wherein the triggering event is at least one of a detection of a wireless local area network border cell and a detection of a degradation of signal quality.

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